is represented as a teacher: he holds a bone in one hand, while the other is outstretched, as if it had just been pointing to some feature in the specimen; the attitude is easy and natural, so that it does not force itself into notice, and the face at once absorbs attention. The likeness is said to be very successful by some of those who knew Sir Richard Owen most intimately. The lines of the face suggest power and vigour; the deeply-shrunk eyes look intently forward; the whole expression is that of a teacher who is speaking with authority, and expects to carry conviction rather than to win it. At the same time the side view of the face gives a suggestion of that kindliness to which Owen owed so much of his social charm. The selection of the specimen which Owen holds in his hand is happy. It is a *Dinornis* femur, and reminds us that it was after an examination of an odd fragment of this bone that Owen, in 1839, predicted that birds larger than the ostrich would be found to have once lived in New Zealand.

The new statue has one great advantage over that of Darwin, which stands on the staircase at the other end of the hall; for its material is bronze instead of marble. Although marble is perhaps the more useful medium for statues of ideal characters like Donatelli's St. George, bronze appears to give more pleasing representations of individual men.

Mr. Brock is warmly to be congratulated on his successful statue, which will permanently remind the public of the services of the great naturalist, to whose persistent agitation we owe the great Museum, that will ever be the truest monument of his life and influence.

PLAN TO GENERATE ELECTRICITY AT THE NILE CATARACTS.

The Department of Public Works in Egypt has long been engaged on plans for dams on the Nile to improve the irrigation. Having lately learnt that the vast energy now wasted in the rapids, generally called cataracts, on the Nile might be converted into electric power, and conveyed even to considerable distances, where an economical form of power would tend greatly to the development and wealth of the country, they asked Prof. George Forbes to go to Egypt during the period of high Nile, and to investigate and survey the localities where power might be developed to a point as far south as the Egyptian frontier. Prof. Forbes was asked to report on the capabilities of all the rapids, and prepare plans and estimates for works both in conjunction with, and independent of, the proposed irrigation dams. The Report, which is to be completed by September 1898, will further embody the scheme for transmitting the electric power to places where it is wanted.

The principal demands for power which are immediately apparent are (1) for railways, (2) for pumping in connection with irrigation, and (3) for the large sugar factories which are now established. The existence of this power will doubtless also stimulate other industries.

Prof. Forbes has satisfied himself, by personal inspection, that the works required would not be too expensive, and that the economical distance of transmission reaches the places where there is demand for power. The high and low Nile conditions are very different, but this presents no insurmountable obstacle. At the first cataract the available power is at high Nile 500,000 h.p., at low Nile 35,000 h.p.

The pumping works to be started will reclaim vast areas, and raise additional crops on areas now cultivated.

For 4000 years every improvement in the condition of Egypt has come from the Nile and irrigation. So it will be in the future. But it must also be remembered that the sugar-cane industry has already developed to an important extent of late years. The factories use a great deal of power, and the lands growing cane require irrigation by pumps. Here there is an immense field for using cheap power.

The first cataract is the most important to utilise, but the others must also be taken in hand. As an example, before the Mahdi's time, the province of Dongola had 8000 sakias for pumping water of irrigation, now nearly all gone. These used eight head of cattle each, costing 10*l*. a head. Here is a capital expenditure of 640,000*l*., which will now be saved by using electric pumps, the cost of which is far less. The construction of the desert railway from Wady Halfa to Abu Hamed would have been robbed of its difficulties as to water and coal if electric instead of steam locomotives had been used.

NOTES

The first of the two conversaziones held annually at the Royal Society will take place on Wednesday, May 19. This is the conversazione to which gentlemen only are invited.

The Paris Municipal Council has voted a sum of 5000 francs (200*l*.) towards the cost of installation and maintenance of a laboratory for Röntgen photography at the Trousseau Hospital.

The Lords Commissioners of the Treasury have authorised an extension of Sir William Flower's term of office as Director of the Natural History Departments of the British Museum for three years from the expiration of his retirement date under the age regulation of the Civil Service.

Prof. W. W. Hendrickson, head of the department of mathematics at the Naval Academy at Annapolis, has, says *Science*, been appointed superintendent of the American Ephemeris and Nautical Almanac, in succession to Prof. Simon Newcomb. The retirement of Prof. Newcomb, on reaching the age limit fixed by the naval authorities, has called forth many notices in appreciation of his great contributions to science.

The sixty-ninth annual meeting of the great German Association of Naturforscher und Aerzte will, it is announced, be held this year at Brunswick, from September 20 to 25. The work will be distributed among thirty-three sections, being an increase of three as compared with previous years. One of the new sections is apportioned to anthropology and ethnology, another to scientific photography, and the third to geodesy and cartography.

Lord Lister will preside at the anniversary dinner of the Literary Fund on May 5.

The King of Denmark has conferred upon Dr. Nansen the Gold Medal of Merit with the Royal Crown.

A complete set of the *Challenger* Reports has been presented to Dr. Nansen in recognition of the eminent services which he has rendered to the cause of scientific exploration in high latitudes by his recent expedition in the *Fram*.

We regret to have to record the deaths of the following men of science:—Dr. de Marbaix, founder and some time director of the Bacteriological Institute of Boma; Dr. Siuku Sakaki, professor of psychology in the University of Tokio.

We notice with much regret the announcement of the death of Prof. E. D. Cope, professor of zoology and comparative anatomy in the University of Pennsylvania.

We note with the highest satisfaction the complimentary remarks which the Colonial Secretary, Mr. Chamberlain, made in the House of Commons on Friday, with reference to the Royal Gardens, Kew. When the vote of 112,291*l*. for Royal parks and pleasure grounds came before the Committee of Supply, Mr. Burns brought up the question of opening the gardens to the public earlier than 12 o'clock, the hour of opening at present. In speaking upon it, Mr. Chamberlain said: "The hon. member has failed to realise the peculiar position in which Kew Gardens stand; he treats them as if they existed for the benefit of the inhabitants of Kew. That is not the proper merit or claim the gardens has upon our support, but it is as a great scientific establishment. We are very justly proud of the gardens. I have seen almost every botanical garden in Europe, and I think I am right in saying there is nothing in the whole of Europe which can hold the candle to Kew. I am not speaking as to the decoration of the gardens, but as to their scientific value. There is nothing peculiar in Kew Gardens opening at 12 o'clock. A great number of foreign institutions open at 12 o'clock, and some do not open until late in the afternoon. But the point is that if the gardens were opened at the time the hon. member desires they should be opened, we should most materially interfere with their value as a scientific institution, and should interfere with the work of the officials. In my capacity as Colonial Secretary I am continually applying to Kew in reference to the cultivation of all kinds of plants, and I do not hesitate to say that some of the great improvements made in the Mauritius and some of the West Indian Islands are due almost entirely to the advice and assistance received from the Kew officials. It is not fair to attack public servants who are really performing useful duty, and it is not fair to throw on them duties which would detract from their value as advisers of the colonial and other officers of the Government who may from time to time have occasion to apply for their services." Mr. Burns afterwards remarked that his object in urging the opening of Kew Gardens at an earlier hour than 12 o'clock was not only in the interests of visitors to London, but on behalf of the large body of young men and young women who were studying botany and kindred subjects at the polytechnics. Mr. Gladstone said that it was desirable to extend the privilege of visiting Kew Gardens to as many people as possible; but the question was not so simple as was supposed. He had gone into the matter fully when he was First Commissioner of Works, and he found that when the gardens were opened on Bank Holidays at an earlier hour than 12, comparatively few people availed themselves of the privilege. He did not think that sufficient advantage would result from this arrangement to balance the extra cost which would be involved. But it might be possible to give more facilities to societies and students to visit the gardens under special permission. In replying to the suggestions that the gardens should be opened at an earlier hour for students, Mr. Akers-Douglas said that there could be no doubt that arrangements might be made in that direction. He had made special inquiries, and he found that any one wishing to visit the gardens early for scientific purposes was never refused admission. If institutions, such as those which had been mentioned, wished for the purposes of study to visit the gardens, he was sure that they would be admitted, and more than that, he would take care that they should be admitted.

THE second annual congress of the South-Eastern Union of Scientific Societies will be held at Tunbridge Wells on Friday and Saturday, May 21 and 22, under the presidency of the Rev. T. R. R. Stebbing, F.R.S. Particulars can be obtained from the Hon. General Secretary, Mr. George Abbott, Tunbridge Wells.

A MEETING of the Institution of Mechanical Engineers will be held on Wednesday evening, April 28, and Friday evening, April 30. The chair will be taken by the President, Mr. E. Windsor Richards. The following papers will be read and discussed, as far as time permits:—"Mechanical Propulsion on Canals," by Mr. Leslie S. Robinson (Wednesday); "Experiments on Propeller Ventilating Fans, and on the Electric Motor driving them," by Mr. William George Walker (Friday).

THE following are among the lecture arrangements at the Royal Institution after Easter:—Dr. Tempest Anderson, four lectures on Volcanoes (the Tyndall Lectures); Dr. Ernest H. Starling, three lectures on the Heart and its Work; Prof. Dewar, three lectures on Liquid Air as an Agent of Research. The Friday evening meetings will be resumed on April 30, when a discourse will be given by Prof. J. J. Thomson on Cathode Rays; succeeding discourses will probably be given by Prof. Harold Dixon, the Right Hon. Lord Kelvin, Prof. H. Moissan, Mr. W. H. Preece, and Mr. William Crookes.

EFFORTS are being made to establish a national photographic record and survey collection, to be under the direction and in charge of the authorities of the British Museum. It is proposed to form a preliminary Committee to organise the work, and to invite to act upon it representatives of the Royal Society, the Society of Antiquaries, the Royal Photographic Society, the Royal Institute of British Architects, the Royal Archæological Institute, the Royal Geographical Society, the Trustees of the British Museum, and others.

ON Easter Monday the 129th meeting of the Yorkshire Naturalists' Union will be held at Boston Spa, for the investigation of the banks of the Wharfe, from Flint's Mill to White Crag. We take the opportunity afforded by this announcement to call attention to the admirable leaflets which the Union issues to the members previous to its meetings. The circular before us points out the most important features of the geology, botany, vertebrate zoology, conchology, and entomology of the district to be visited, and is altogether a business-like and helpful production. Many natural history societies would do well to take the methods of the Yorkshire Naturalists' Union as their pattern.

A VERY fine specimen of an egg of the Great Auk was sold by auction at Mr. J. C. Stevens' rooms on Tuesday. Bidding began at 100 guineas, and reached 280 guineas, at which price the egg was secured by Mr. T. G. Middlebrook.

AT a recent special meeting of the Royal Scottish Society of Arts, says the *Electrician*, a report by the Committee appointed to adjudicate on the electric meters that had been submitted in competition for the special Keith prize of 50*l.* was read. Nine meters were sent in. These were tested at the Edinburgh central station with continuous and alternating currents. The Committee were of opinion that while several of the meters possessed many points of novelty and ingenuity which might be capable of further development, none of them were of sufficient merit to warrant the Society in making any award.

WE learn from the *Times* that the Council of the Royal Geographical Society have awarded the annual honours as follows:—The Founder's medal to M. Semenoff, Vice-President of the Russian Geographical Society; the Patron's medal to Dr. George M. Dawson, C.M.G., F.R.S., Director of the Geological Survey of Canada; the Murchison grant to Lieutenant Seymour Vandeleur, D.S.O., for his journey of 900 miles in Somaliland and along the Abyssinian frontier in 1893-94; for making surveys of 2073 miles of routes in Uganda, Unyoro, and on the Upper Nile, in 1894-96; and for astronomically surveying 200 miles of practically unknown country in the Niger region, and surveying the new road to Bida and Ilorin from Jebba. The Gill memorial to Mr. C. E. Douglas, for persistent explorations on the western slopes of the New Zealand Alps, extending over twenty-one years

(1874-95); the Cuthbert Peek grant to Dr. Thorvald Thoroddsen, who since 1882 has been continuously exploring Iceland, having at various times covered nearly the whole island; the Back grant to Lieutenant Ryder (of the Danish Navy), for his explorations in East Greenland in 1891 and subsequent years, during which he made important rectifications on the coast, discovered a new series of fjörds, and made important meteorological observations. The following have been elected Honorary Corresponding Members of the Royal Geographical Society:—Prof. G. Della Vedova, Secretary of the Italian Geographical Society; Baron Toll, Russian explorer of the new Siberian islands; and Captain Otto Irminger, President of the Danish Geographical Society.

THE science of experimental psychology, which is zealously pursued in Germany, in the United States, and elsewhere, clearly deserves more attention in this country than it has hitherto received, and it is now proposed that facilities should be afforded for its study at University College. With this object in view a meeting, at which a number of representative men of science were present, was recently held; and a resolution was unanimously adopted expressing the conviction "That, in the opinion of this meeting, it is eminently desirable to establish a laboratory for experimental psychology in University College." An organising Committee, consisting of Mr. Francis Galton, F.R.S., Dr. W. H. R. Rivers, Prof. G. Carey Foster, F.R.S., Prof. Karl Pearson, F.R.S., Prof. E. A. Schäfer, F.R.S., Prof. J. Sully (Secretary), was formed to inquire into the probable cost of the undertaking, and to send out a letter inviting contributions. As the Professors of Physics and Physiology at University College think it possible that they will be able to afford accommodation, at least temporarily, in their laboratories for the teaching of this subject, and that they could assist to some extent by the loan of apparatus, the work could be established at comparatively small cost. It is estimated that an outlay of about 100*l.* would suffice, in the first instance (with the loan of existing apparatus), to provide the equipment necessary for a small laboratory. It is considered, further, that at the outset it may be wise not to attempt more than a course of instruction extending over one term in the year, and that an annual sum of about 100*l.* would enable the Committee to secure the services of an instructor for a single term in each year, and to commence work. For funds to do this the Committee have made an appeal for help to those who are interested in psychological investigations. Cheques should be sent to the London and South Western Bank, Limited, Hampstead Branch, 28, High Street, Hampstead, N.W,, to the account of the "Psychological Laboratory, University College."

LIEUT. PEARY's plan to reach the North Pole has been approved by the American Geographical Society. It has recently been explained by him as follows:—He wishes to proceed along the west coast of Greenland to the northernmost settlement, and there secure five or six young married couples to establish a new settlement as far north as the steamer can conveniently proceed, probably on some island in the Archipelago, and within the distance of 360 miles from the Pole. The settlement will be provisioned for three years, and will include only one, or perhaps two whites, besides himself. All will live together in Eskimo fashion, and will await, for years if necessary, a condition favourable to making the journey over ice on sleds, which can be accomplished at the rate of ten miles a day, so that seventy-two days will suffice to go and return. The ship is to visit the station every year with fresh stores of provisions, but the stock on hand will suffice to support the party in case of failure to reach them for one year, or even two. The expense of the undertaking, if protracted for several years, is estimated at less than 150,000 dols., with a probability of very large reduction from this amount if success is soon attained.

IT is understood (states the *Times*) that the order recently promulgated by the Board of Agriculture concerning the muzzling of dogs in the metropolitan area is only the first step in a comprehensive scheme for giving effect to the recommendation of Mr. Whitmore's Departmental Committee, "that the time has come and the circumstances are opportune for the Board of Agriculture to make a determined and systematic attempt to stamp out rabies." In view of the expression of opinion placed on record by the Committee that such an attempt "will not involve universal muzzling, inasmuch as there are districts where rabies have never appeared," but that the Board of Agriculture "should have regard to the country as a whole, and should impose muzzling over considerable areas, irrespective of the boundaries of boroughs and counties," it is obvious that great discrimination must be exercised in determining the districts in which precautionary measures are needed. From the reports which Mr. Long has received, however, it is clear that London is not an exceptional case; and a muzzling order may shortly be looked for, embracing the whole of South Lancashire and possibly a portion of Cheshire as well. Another area likely to be scheduled at no distant date is that of which Birmingham is the centre.

WHEN mine host in the ideal country inn, which all of us seek but none of us find, brings up a bottle of crusted wine covered with cobwebs and dust, this outward and visible sign is taken as convincing evidence of age. We grieve to have to record that the trust may now be misplaced. A *Bulletin* (No. 7) of the Division of Entomology of the U.S. Department of Agriculture says that in France and Pennsylvania an industry has recently sprung up, which consists of the farming of spiders for the purpose of stocking wine cellars, and thus securing almost immediate coating of cobwebs to new wine-bottles, giving them the appearance of great age. This industry is carried on in a little French village in the Department of Loire, and near Philadelphia, where *Epeira vulgaris* and *Nephila plumipes* are raised in large quantities and sold to wine merchants at the rate of ten dollars per hundred. This application of entomology to industry is one which will not be highly commended.

THE immense advance that has taken place in the accommodation provided for large vessels at the principal ports of this kingdom, may be realised by drawing attention to the fact that a steamship is now under construction which is to be 25 feet longer than the *Great Eastern*, which proved such a white elephant to all who had to do with her, owing to her size and draught, that she was finally broken up and sold for old metal. The *Oceanic*, now under construction by Messrs. Harland and Wolff, at Belfast, for the White Star Fleet, is to be 704 feet in length, or 65 feet longer than any other steamer yet built, and her gross tonnage will exceed 17,000 tons. It is anticipated that she will maintain an average speed of 20 knots, or over. This vessel would be able to steam, in case of need, 23,400 miles at 12 knots an hour, or practically round the world, without coaling.

THE specification of the patent taken out in the names of the late M. Dansac and M. Chassagne, for the process of producing photographs in colour, is reprinted in the current number of the *British Journal of Photography*. It will be remembered that the process was described as based upon the property of selective colour absorption superinduced by (1) treating the plate upon which the negative was taken with a special solution; and (2) treating the positive print with the same solution, the successive application of the blue, red, and green colouring solutions producing the natural colour effect on the print. Our contemporary points out, however, that there is no reference in the inventors' description to the treatment of the negative or the unexposed plate with any special solution. The process appears to consist in treating a silver print or glass transparency with five specially prepared solutions, the compositions of which are described in the specification.

THOSE who have studied rocks from the point of view of their magnetic properties, have long been aware of the existence of certain isolated portions, or zones, endowed with intense magnetisation, the distribution of which, in general, bears no fixed relation to the direction of the earth's magnetic field. The theory, frequently advanced, that these singular points owe their magnetisation to discharges of lightning, has received a remarkable confirmation at the hands of Dr. G. Folgheraiter. As the result of numerous observations of the remains of walls and ancient buildings in the Roman Campagna, Dr. Folgheraiter finds that these structures frequently exhibit singular points and zones in every respect identical with those observed in rocks. The presence of singular *points* in walls might be accounted for by supposing that they had existed in the stone before it was used for building; but this explanation is incapable of accounting for the singular *zones* in which a number of adjacent stones, as well as the mortar connecting them, were found to be so powerfully magnetised, that even a small detached portion of the mortar was capable of deflecting a compass-needle through 180°. These zones could only have derived their magnetisation after the wall had been built, and the presence, in some cases, of cracks down the wall in the neighbourhood of the singularities, such as would be caused by lightning, tends to confirm the present theory of their origin.

The classification of cubic curves is due to Newton; but while many papers dealing with curves of the fourth degree are to be found in various mathematical periodicals, these have usually left the appearance of the curves largely to the reader's imagination. We have, therefore, much pleasure in calling attention to a dissertation by Dr. Ruth Gentry, of Bryn Mawr College, "On the Forms of Plane Quartic Curves" (New York: Press of Robert Drummond, 1896), containing a complete enumeration of the fundamental forms of these curves, and thus achieving for quartic curves what Newton accomplished for cubics.

THE papers read before the London Mathematical Society from November 1895 to November 1896, have just been published in vol. xxvii. of the Society's *Proceedings*. As we regularly give a brief account of the meetings of the Society, it is unnecessary for us to do more now than call attention to the publication in full of the papers referred to in our reports.

AMONG the eight valuable papers in the new number of *Science Progress* (April) is one, by Prof. E. B. Poulton, on "A Remarkable Anticipation of Modern Views on Evolution." It clearly appears from the article that James Cowles Prichard, distinguished for his researches in anthropology and etnnology, must be given a very important place among the pioneers of evolution. The second volume of his "Researches into the Physical History of Mankind" (second edition, 1826) contains a most interesting contribution to the history of evolution, and it seems to have been overlooked entirely until Dr. Maurice Davis called Prof. Meldola's attention to it. A careful examination of the work leads Prof. Poulton to conclude that "Prichard apprehended with perfect clearness that domesticated races of animals and plants have been produced by the selection of man, and not by favourable surroundings, careful training or cultivation. He believed in the possibility of organic evolution, and supported it by excellent arguments which still have the strongest weight to-day. He even recognised the operation of natural selection, although he assigned to it a subordinate *rôle*. The most important anticipation is, however, the masterly discussion on the transmission of acquired characters, a discussion in which the distinction between acquired and inherent or congenital characters is clearly drawn, and many of the most difficult cases are fully argued out, the conclusions reached being those independently arrived at by Prof. Weismann over half a century later."

A VERY good portrait of Darwin, reproduced from a photograph by Mrs. J. M. Cameron, forms a supplement to the current number of the *Academy* (April 10).

THE *Journal of Botany* for April gives an interesting sketch, and a portrait, of the life of Mr. H. Boswell, of Oxford, the bryologist, who died on February 4, in his sixtieth year.

WE learn, from the *Journal of Botany*, that the Foreign Office has issued a Report on the Botanical Aspects of British Central Africa, by Mr. Alexander Whyte, treating of the economical side of the subject.

THE methods in which the natives of New Caledonia cultivate yams and taro is described by M. Glaumont in *L'Anthropologie* (1897, Tome viii. p. 41). To irrigate the latter, long, wide ditches are dug of varied form; some are in spirals, others quite labyrinthiform.

As examples of results obtained by means of a pin-hole camera, some photographs reproduced in the *Amateur Photographer* (April 2) are remarkably good. The pictures accompany two articles, by Mr. George Davison and Mr. H. C. Shelley, on pin-hole cameras and their use.

HERR J. BRUNNTHALER, of Vienna, has issued a very copious "Jahres-Katalog" of the Vienna *Kryptogamen-Tauschanstalt*, in German, French, and English, consisting of a very long list of species in the various families of Cryptogams offered in exchange or for purchase. The locality of the collection is in all cases given, and several new species of Fungi are described.

WE have received the Annual Report of the Royal Botanic Gardens, Trinidad, for 1896. Among interesting items of information is the rediscovery in the island of *Sacoglottis amazonica*, thus establishing the source of one of the "drift fruits" discussed in the Reports of the *Challenger* Expedition, as being found by various collectors in the Caribbean and other seas.

PROF. W. A. HERDMAN, who has done a little work in prehistoric archæology in the Isle of Man and elsewhere, threw out the suggestion, at a recent meeting of the Liverpool Biological Society, that the "Calderstones" near Liverpool originally were part of a dolmen; a visitor present on that occasion corroborated this view, and the evidence has since been collected by Prof. Herdman in the *Transactions* of that Society.

A MYKENÆAN painting on a calcareous slab is described by M. Salomon Reinach in *L'Anthropologie* (1897, Tome viii. p. 19). It represents five marching warriors, who carry circular shields, and who are poising their javelins as if on the point of throwing them; below are five ill-drawn animals. M. Reinach hopes that it will soon be possible to clearly distinguish between Achæan and Ægean or Pelasgian finds. He refers the painted slab to the former culture.

THE study of iron carbide has for a long time occupied the attention of chemists, the general result of whose researches has been to show that steel contains a crystalline carbide corresponding to the formula Fe_3C. Curiously enough, although this was one of the first metallic carbides known, it has proved to be the last to be prepared in quantity by direct synthesis. When pure iron and carbon are melted together in the electric furnace and allowed to cool slowly, the ingot contains only about 1 per cent. of combined carbon, although the presence of a considerable quantity of graphite shows that the mass, when fluid, contained a much higher percentage. In preparing diamonds by rapidly cooling a solution of carbon in iron, M. Moissan noticed, in the central portion of the casting, signs of crystallisation recalling the appearance of the boride and the silicide of iron. It thus appeared probable that the carbide of iron could exist at a very high temperature, but was almost completely decomposed on slowly cooling to the solidifying point of the casting. Following up this observation, M. Moissan heated pure iron for three minutes in a carbon crucible with a current of 900 amperes at 600 volts, the mass being then taken from the furnace and poured directly into cold water. The ingot was crystalline in structure, containing from 3 to 4 per cent. of combined carbon, but no graphite. From this the carbide was separated, by a modification of the method of Mylius, Fœrster and Schwenz, in brilliant crystals of exactly the composition Fe_3C (*Comptes rendus*, April 5). Water has no action upon this, even at 150°, but hydrochloric acid gives a mixture of hydrogen and methane. The experiment is stated by M. Moissan to be free from danger, but is hardly likely to be frequently repeated in the laboratory on account of the enormous currents required, representing, indeed, upwards of 700 horse-power.

Father Sidgreaves has issued his report on the meteorological, magnetic, and other observations made at the Stonyhurst College Observatory in 1896. It is curious that the instruments at Stonyhurst seem to object to furnish positive evidence of phenomena, either terrestrial or celestial. Tracings of the horizontal magnetic direction and force were examined in connection with several distant earthquakes; but Father Sidgreaves says he has found nothing in the movements of the magnets that could be attributed to any but magnetical disturbance. Even the nearer earth tremor of December 17, 1896, made no impression on the Stonyhurst magnetic curves. Over 350 photographs of stellar spectra were obtained during the year with the compound prism spectrograph in combination with the Perry-Memorial objective.

An admirable series of leaflets on birds, edited by Mr. H. E. Dresser, has been published by the Society for the Protection of Birds. Part I. contains short and popular articles, written by well-known ornithologists, on owls, woodpeckers, starling, swallows, kingfisher, osprey, dippers, nightjar, titmice, kestrel, and plovers. The leaflets will do good service in interesting the public in our feathered friends, and in preventing the wanton destruction and possible extermination of beneficial species. At the end of the collection of leaflets is a concise and clear statement of the Acts and Orders which have been made for the protection of eggs and birds in the different counties.

The following new editions of scientific works have recently been published:—"Stones for Building and Decoration," by George P. Merrill. (New York: Wiley and Sons. London: Chapman and Hall.) This book has already been reviewed in Nature (vol. xlv. p. 222, 1892); the present edition, however, contains over fifty more pages than the original. It deals almost entirely with stones found in North America, or imported, and used in the United States for building and ornamental purposes.—"Collected Contributions on Digestion and Diet," by Sir William Roberts, F.R.S. Second edition. (London: Smith, Elder, and Co.) All the contributions the author has made, either in the form of lectures or papers, to subjects relating to digestion, dietetics, and dyspepsia, are brought together in this volume. An article on the opium habit in India, which appeared as an "annexure" to the Report of the Royal Commission on Opium (1895), has been appended to the new edition.—The eighth edition of an "Elementary Text-book of Physics," by Prof. W. A. Anthony, Prof. C. F. Brackett, and Prof. W. F. Magie, has been published by Messrs. Wiley and Sons. The book contains a concise and instructive statement of the fundamental principles of physics. It possesses many good features, and may be used with advantage as a text-book of physics for the higher classes in schools and colleges.

The Cambridge University Press will publish very shortly: "The Life-Histories of the British Marine Food-Fishes," by Dr. W. C. McIntosh, Professor of Natural History in the University of St. Andrews, and Mr. A. T. Masterman, Assistant Professor and Lecturer in Natural History in the same University.

The additions to the Zoological Society's Gardens during the past week include a Chacma Baboon (*Cynocephalus porcarius*, ♂), a Levaillant's Cynictis (*Cynictis penicillata*), a Jackal Buzzard (*Buteo jacal*), a Cape Grass Owl (*Strix capensis*), two Hoary Snakes (*Pseudaspiscana*), two Yellow Cobras (*Naia flava*), a Puff Adder (*Bitis arietans*) from South Africa, presented by Mr. J. E. Matcham; a Red-footed Ground Squirrel (*Xerus erythropus*) from West Africa, presented by Sir Archibald Lamb; a Larger Tree Duck (*Dendrocygna major*) from India, presented by Mr. W. Jamrach; two Barbary Turtle Doves (*Turtur risorius*) from Africa, presented by Mr. W. S. Berridge; a Crested Porcupine (*Hystrix cristata*) from West Africa, an Argus Pheasant (*Argus giganteus*, ♀) from Malacca, a Red and Blue Macaw (*Ara macao*) from South America, an Indian White Crane (*Grus leucogeranos*) from India, deposited; four Tufted Ducks (*Fuligula cristata*), European; two Red-backed Buzzards (*Buteo erythronotus*) from South America, two Barred-shouldered Doves (*Geopelia humeralis*) from Australia, purchased; a Markhoor (*Capra megaceros*, ♂) from North-east India, received in exchange; a Mouflon (*Ovis musimon*, ♂), four Coypu Rats (*Myopotamus coypus*), born in the Gardens.

OUR ASTRONOMICAL COLUMN.

Observations of Jupiter's Fifth Satellite.—Prof. J. M. Schaeberle, writing from the Lick Observatory to the *Astronomical Journal* (No. 398), gives the results of his observations relating to the fifth satellite of Jupiter. These measures will furnish considerable data for correcting the mean motion of the satellite, even if no other observations be secured at the present season. Marth's ephemeris was found still to be in good agreement with the observed place, the error in time of elongation being less than four minutes. The observations were made on February 27 of this year, and were begun within half an hour of the satellite's greatest elongation.

Harvard College Observatory Report.—We have received the fifty-first annual report of the director of the Astronomical Observatory of Harvard College, Prof. E. C. Pickering, to the president of the University. A glance at this shows one what an immense amount of useful work is being done at this observatory, and how great a scope is included in it. The two subjects to which special attention is called, are the successful erection of the Bruce photographic telescope in Peru, and the establishment of a series of circulars, which have for their object a prompt means of announcing discoveries made at the observatory or its branch stations, and other similar matters of interest. The usual routine work has been continued with the well-known energy displayed by the director in all departments. Thus with the East equatorial, among other observations, 4192 comparisons have been made to determine the form of the light curve of the Algol variable W Delphini, 3436 of U Cephei, and 1616 of Z Herculis and 1748 of T. Andromedæ. The photographs taken with the 8-inch Draper telescope numbered 2508, while the 8-inch Bache telescope has been employed in obtaining 2770 stellar spectra. Among these many very interesting objects have been discovered, several of which have been previously referred to in these columns. The 13-inch Boyden tele-